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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Shutaro Nakanishi

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EXAMINER

CHRISS, JENNIFER A

ART UNIT

PAPER NUMBER

1794

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/580,796	Applicant(s) NAKANISHI, SHUTARO	
	Examiner JENNIFER A. CHRISS	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 May 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-2 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's Amendments and Accompanying Remarks filed on May 26, 2009 has been entered and carefully considered. Claim 1 is amended, claim 3 is cancelled and claims 1 – 2 are pending. In view of Applicant's amendment to claim 1, the Examiner withdraws the Specification objection and the 35 USC 112, 1st and 2nd paragraph rejections due the removal of the unsupported phrase ""the crushed particulate material...has a density from 50 to 150 g/m²". In view of Applicant's amendments to claim 1, the Examiner withdraws all previously set forth rejections as detailed in the Office Action dated February 17, 2009. After an updated search, additional art has been found which renders the invention as unpatentable for reasons herein below.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Specification

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction

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of the following is required: Claim 1 has the new limitation of "a porous mat....with pores formed between the filaments". The Specification does not have support for "a porous mat....with pores formed between the filaments".

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. Claim 2 is rejected as being dependent on claim 1.

The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

6. Claim 1 has the new limitation of "a porous mat....with pores formed between the filaments". The Specification does not have literal or implicit support for "a porous mat....with pores formed between the filaments".

Claim Rejections - 35 USC § 103

7. Claims 1 – 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hagerman (US 3,278,967) in view of Hiragami et al. (US 4,501,783) and further in view of Kwak et al. (US 2002/0111406) as evidenced by the article entitled "A Quick and

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Easy Formula for Mesh-Micron Particle Conversions” by Don Kirk.

Hagerman is directed to a non-slip fibrous doormat (Title and column 3, lines 4 - 30).

Hagerman teach a fibrous door mat as shown in the figures comprising an open, three-dimensional porous structure of curled hair filaments (column 2, lines 35 – 55) where granular materials employed in a non-slip coating is provided on the filaments by means of a sprayed mixture of plasticized polyvinyl chloride, hard granular particles, resin and water (a diluent) (column 3, lines 4 - 30 and Example).

Hagerman teach the claimed invention but fail to teach that the filaments are made of resin and the particulate material is made of resin. Additionally, Hagerman fail to teach the use of particles ranges from 15 to 80 mesh size.

Hiragami et al. is directed to a non-slip floor material (Title). Hiragami et al. teach that the floor material comprises a polyvinyl matrix layer having dispersed therein synthetic resin particles in an amount of at least 3 weight % of the entire matrix layer where a quantity of resin particles are exposed from the surface of the matrix layer (column 1, lines 55 - 69). Hiragami et al. teach that the polyvinyl chloride matrix layer is made with polyvinyl chloride with known additives such as a plasticizer, filler and thermal stabilizer (column 2, lines 5 - 10). Hiragami et al. teach that the particles, including the ones exposed at the surface, can comprise synthetic resin particles which are not limited to fresh materials but also can be waste plastic particles in pulverized form (column 2, lines 15 - 30). The particles are preferably in the range of 100 microns

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to 1 mm in particle size (column 2, lines 45 – 60). According to the article by Don Kirk, particle size and mesh can be easily converted using the formula published in the paper where microns = 15,000/mesh according to the Kirk Mesh Equation or according to the trendline where microns = 14,992/mesh. As shown in the chart, a particle size of 100 microns - 1000 microns as taught by Hiragami et al. would be equated to approximately 150 - 15 mesh which completely encompasses Applicant's claimed range. Hiragami et al. note that, if the particles are too fine, the material will not exhibit non-slip properties and if they are too large, they will not be uniformly distributed resulting in a faulty product (column 2, lines 45 - 60). As shown in Figure 1, the polyvinyl chloride matrix is attached to a backing such as a sheet of foamed or non-foamed plastic, woven or nonwoven fabric (column 2, lines 65 - 69).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use synthetic resin particles and resin filaments for the mat body as suggested by Hiragami et al. in the fibrous doormat of Hagerman motivated by the desire to create a door mat using updated and readily available recycled materials such as waste particles.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use particles ranging from 15 – 150 mesh motivated by the desire to create a door mat having the desired level of slip-resistance.

Hagerman in view of Hiragami et al. teach the claimed invention above but fail to disclose that the polyvinyl chloride matrix specifically has a polyester-based plasticizer.

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Kwak et al. is directed to an aliphatic polyester used for plasticizing polyvinyl chloride (Abstract). Kwak et al. indicate in the background that many plasticizers are used to create flexible PVC such as di[2-ethylhexyl]phthalate or DOP which is a low molecular weight plasticizer (page 1, [0005]). Kwak et al. indicate that the low molecular weight plasticizers are undesirable because they tend to volatilize into the air or transfer to the outside through the contacts with liquid or solid substance creating an environmentally unfriendly blend (page 1, [0006] - [0009]). In order to alleviate this issue, Kwak et al. developed a aliphatic polyester compound for plasticizing polyvinyl chloride which avoids the volatilizing issue while having superior compatibility with polyvinyl chloride, superior efficiency to plasticize and providing the polyvinyl chloride sufficient flexibility (page 1, [0012]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use an aliphatic polyester plasticizer as suggested by Kwak et al. motivated by the desire to create an environmentally-friendly floor mat.

Hagerman in view of Hiragami et al. and Kwak et al. disclose the claimed invention except for that the crushed particulate matter distributed in a range of 50 to 150 g/m². The amount of crushed particulate matter is a result effective variable. Hiragami et al. note that the amount of particulate matter should be at least 3 weight % based on the entire weight of the matrix layer and there is no particular upper limit but the use of more than 30 weight % produces little or no enhanced effect (column 2, lines 45 – 60). Hiragami et al. note the desire to provide increased friction of the floor material

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preventing continuous slippage and exhibiting outstanding non-slip properties but while also having a substantially smooth surface which retains a beautiful appearance at all times (column 3, lines 20 - 45). It would have been obvious to one having ordinary skill in the art at the time the invention was made to create the floor mat with a particulate material density of 50 to 150 gsm since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In the present invention, one would have been motivated to optimize the amount of surface particulate matter in order to create a floor mat having the desired level of non-slip properties balanced with a substantially smooth and beautiful appearance.

Response to Arguments

8. Applicant's arguments with respect to claims 1 - 2 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JENNIFER A. CHRISS whose telephone number is (571)272-7783. The examiner can normally be reached on Monday - Friday, 8:30 a.m. - 6 p.m., first Friday off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on 571-272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jennifer A Chriss/
Primary Examiner, Art Unit 1794

/J. A. C./
Primary Examiner, Art Unit 17944